

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. – 9. (Canceled)

10. (New): A method of placing at least one component on at least one substrate, the method comprising the steps of:

placing a first component on a substrate,

imaging the first component placed on the substrate;

determining, using the image of the first component, if any difference exists between an actual position of the first component on the substrate and a predetermined desired position of the first component on the substrate; and

placing a second component at another desired position on the substrate, while taking into account any such difference.

11. (New): The method according to claim 10, further comprising the steps of:

picking-up the first component by means of a first placement machine before the first component is placed on the substrate;

picking-up the second component by means of a second placement machine before the second component is placed on the substrate.

12. (New): The method according to claim 11, wherein the first placement machine is also the second placement machine.

13. (New): The method according to claim 11, wherein the first and second placement machines are distinct from each other.

14. (New): The method according to claim 13, wherein at least one of the first and second placement machines comprises a camera, and wherein the step of imaging the first component placed on the substrate is accomplished using the camera of either or both of the first and second placement devices.

15. (New): The method according to claim 13, wherein both of the first and second placement machines comprises a camera, and wherein the step of imaging the first component placed on the substrate is accomplished using the cameras of both of the first and second placement devices.

16. (New): The method as claimed in claim 15, wherein a joint image of the substrate and the first component positioned thereon is produced from images produced by both of the cameras.

17. (New): A method of placing at least one component on at least one substrate, the method comprising the steps of:

placing a plurality of first components at substantially the same positions on corresponding substrates,

imaging the first components placed on the substrates;

determining, using the images of the first components, if any difference(s) exists between an actual position of each of the first components on the corresponding substrate and predetermined desired positions of each of the first components on the corresponding substrate; and

placing at least one second component at another desired position on one of the substrates, while taking into account any such difference.

18. (New): The method according to claim 17, further comprising the steps of:

picking-up the plurality of first components by means of at least one first placement machine before the plurality of first components is placed on the corresponding substrates;

picking-up the at least one second component by means of at least one second placement machine before the at least one second component is placed on one of the substrates.

19. (New): The method according to claim 18, wherein at least one of the second placement machines comprises a camera, and wherein the step of imaging the first components placed on the corresponding substrates is accomplished using the camera(s).

20. (New): The method according to claim 18, wherein each of the placement machines comprises a camera, and wherein the step of imaging the first components placed on the corresponding substrates is accomplished using each of the cameras.

21. (New): The method as claimed in claim 20, wherein joint images of each substrate and the first component positioned thereon are produced from images produced by the cameras.

22. (New): A method of placing at least one component on at least one substrate, the method comprising the steps of:

placing a plurality of first components on a substrate,
imaging the first components placed on the substrate;
determining, using the images of the first components, if any difference(s) exists between an actual position of each of the first components on the substrate and a predetermined desired position of each of the first components on the substrate; and
placing a second component at another desired position on the substrate, while taking into account any such difference.

23. (New): The method according to claim 22, further comprising the step of:
averaging statistically the difference(s) between the actual and desired positions of each of the first components on the substrate.

24. (New): The method according to claim 22, further comprising the steps of:
picking-up the plurality of first component by means of at least one first placement machine before the plurality of first components is placed on the substrate;
picking-up the second component by means of a second placement machine before the second component is placed on the substrate.

25. (New): The method according to claim 22, wherein at least one of the placement machines comprises a camera, and wherein the step of imaging the first components placed on the substrate is accomplished using the camera.

26. (New): The method according to claim 22, wherein each of the placement machines comprises a camera, and wherein the step of imaging the first components placed on the substrate is accomplished using each of the cameras.

27. (New): The method as claimed in claim 26, wherein a joint image of the substrate and the first components positioned thereon is produced from images produced by each of the cameras.

28. (New): A system for placing at least one component on at least one substrate, the system comprising:

at least one placement machine comprising a processor; and

an imaging device interfaced with the placement machine,

wherein the imaging device is configured to image a first component positioned on a substrate by the placement machine, and

wherein the processor is configured to determine, using the image of the first component positioned on the substrate, if any difference exists between an actual position of the first component on the substrate and a desired position of the first component on the substrate.

29. (New): The system as claimed in claim 28, wherein the placement machine further comprises a drive, and wherein the drive is configured to be adapted by the processor to account for any determined difference.

30. (New): The system as claimed in claim 28, wherein the imaging device is a camera.

31. (New): The system as claimed in claim 30, wherein the imaging device is a provided on the at least one placement machine.

32. (New): The system as claimed in claim 28, wherein the system comprises at least two placement machines.

33. (New): The system as claimed in claim 32, wherein each of the placement machines further comprise a drive, and wherein the drives are configured to be adapted by the processor to account for any determined difference.

34. (New): The system as claimed in claim 33, wherein a first of the two placement machines is configured to position the first component on the substrate, and wherein a second of the two placement machines is configured to position a second component at another desired position on the substrate.